Fall Protection

How long does it take to fall

Height (feet)	***Time (seconds)***
4	***0.5***
16	***1.0***
36	***1.5***
64	***2.0***
100	***2.5***
144	***3.0***

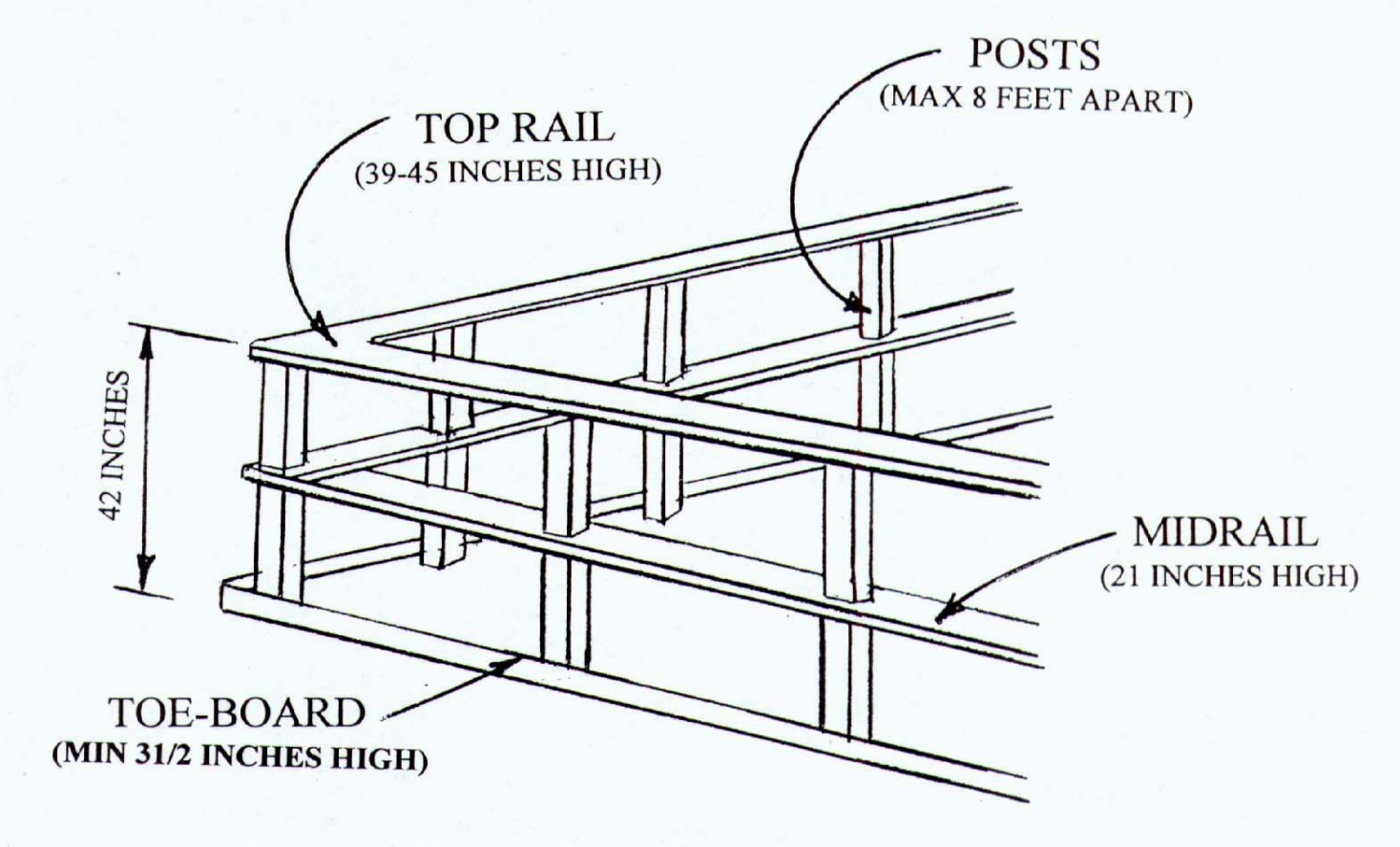
CONUS Fatal Occupational Injuries (BLS)

Type of Exposure	***1997***	***1998***
1. Transportation Incidents	***2,599***	***2,630***
2. Assault & Violent Acts	***1,103***	***960***
3. Contact w/Objects & Equipment	***1,034***	***914***
4. Falls	***716***	***702***
5. Exposure to Harmful Substances	***550***	***572***
6. Fires and Explosions	***196***	***205***
7. Other Events or Exposures	***21***	***16***

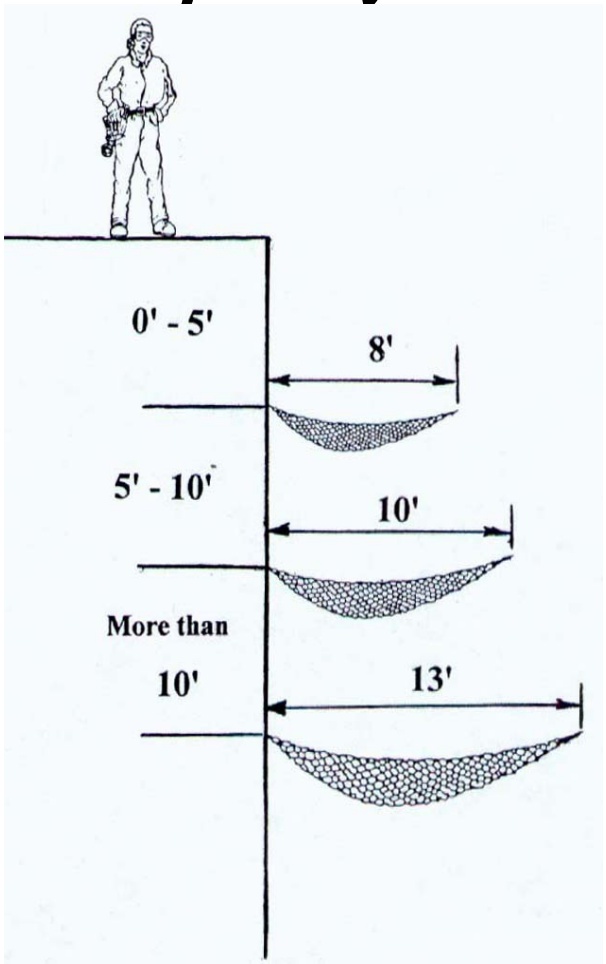
Fall Protection Systems

- ***Guard Rails***
- ***Safety Nets***
- ***Fall Arrest Systems***

Guardrail

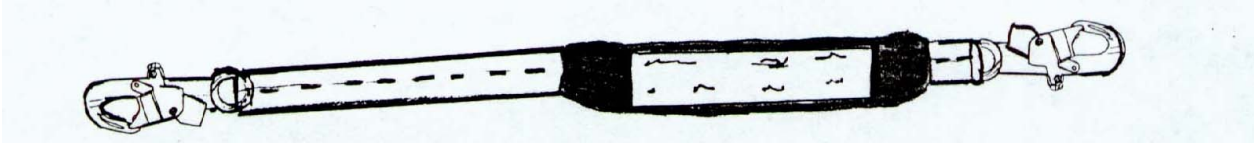

POSTS
(MAX 8 FEET APART)
TOP RAIL
(39-45 INCHES HIGH)
42 INCHES
MIDRAIL
(21 INCHES HIGH)
TOE-BOARD
(MIN 31/2 INCHES HIGH)

Safety Nets

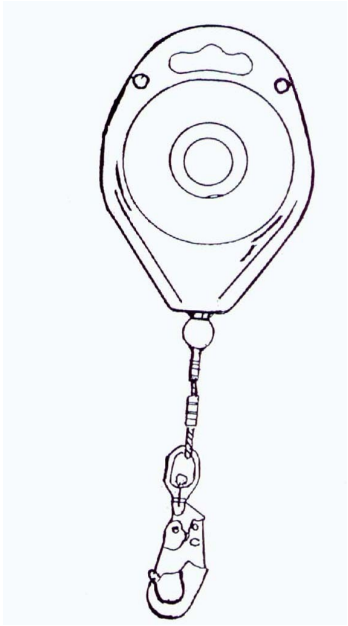


Safety net extension

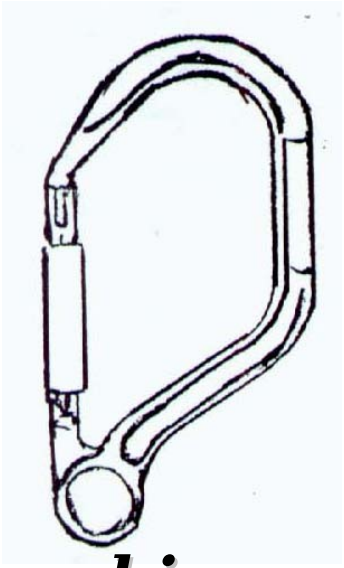
Connecting Means



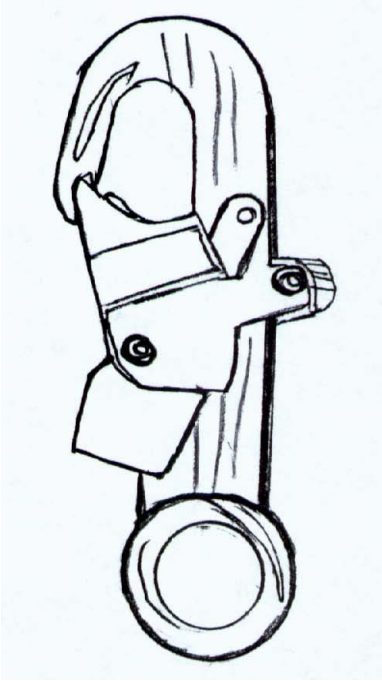
Shock Absorbing Lanyard



Self retracting Lanyard

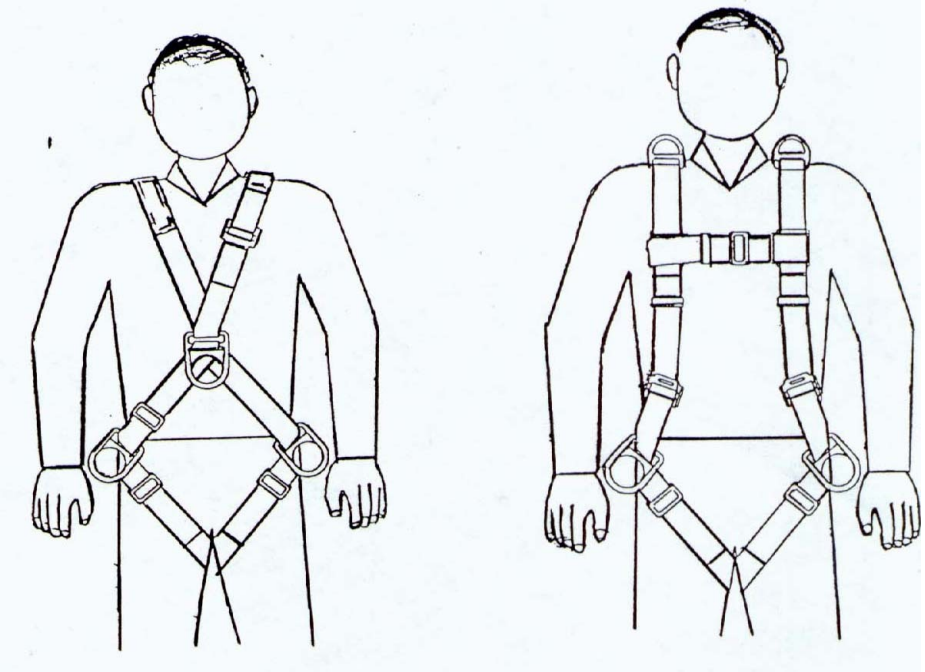


Carabiner



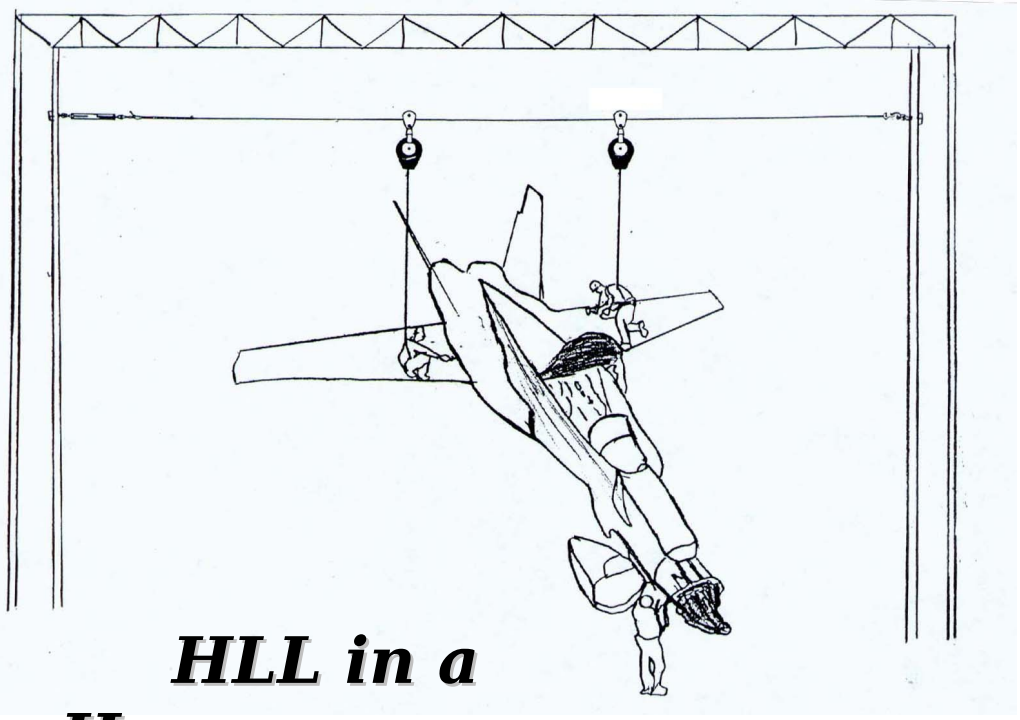
Snap Hook

Body Support

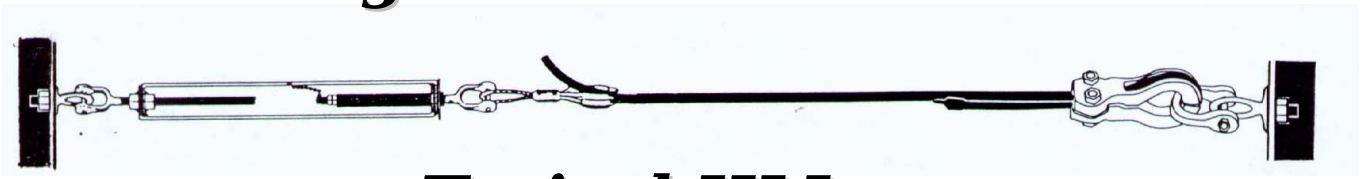


Full Body Harness

Horizontal Lifelines

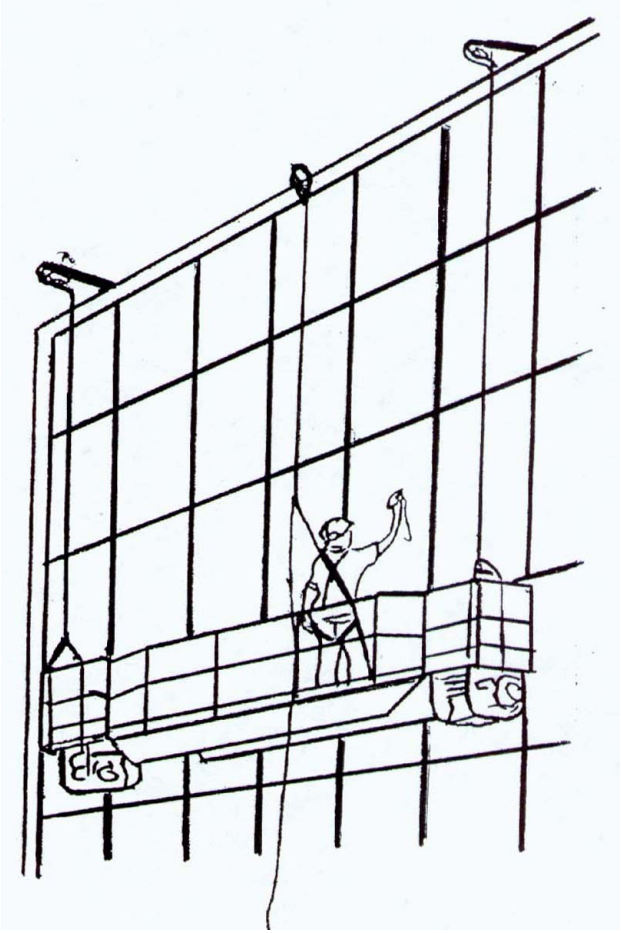


HLL in a Hangar



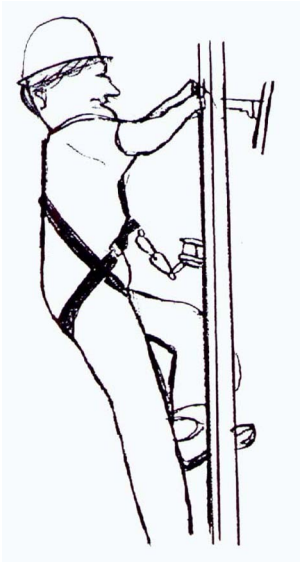
Typical HLL

Vertical Lifelines

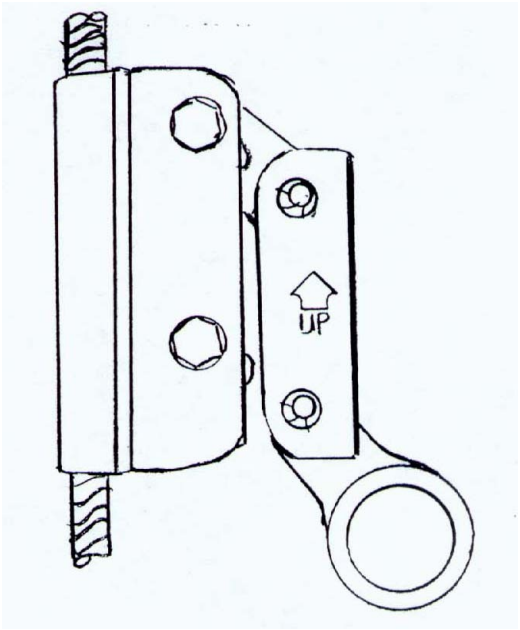


Suspended Scaffold w/Independent Vertical Lifeline

Ladder Climbing Devices

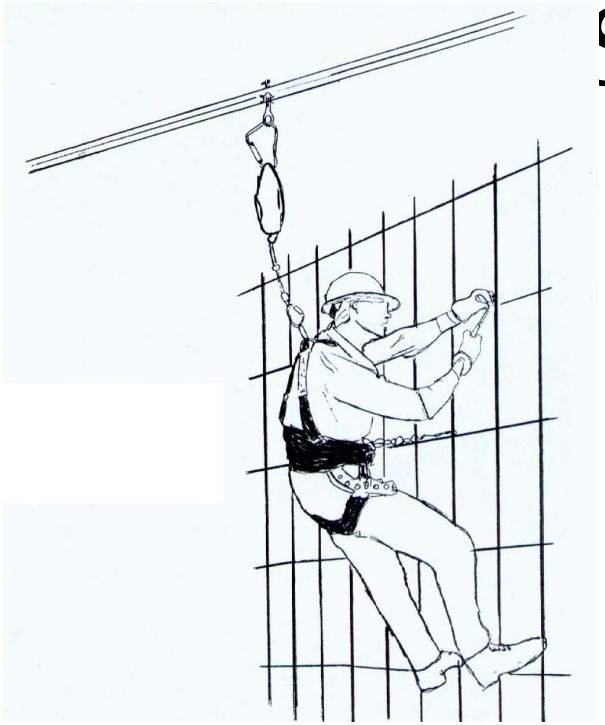


Ladder Climbing Device System



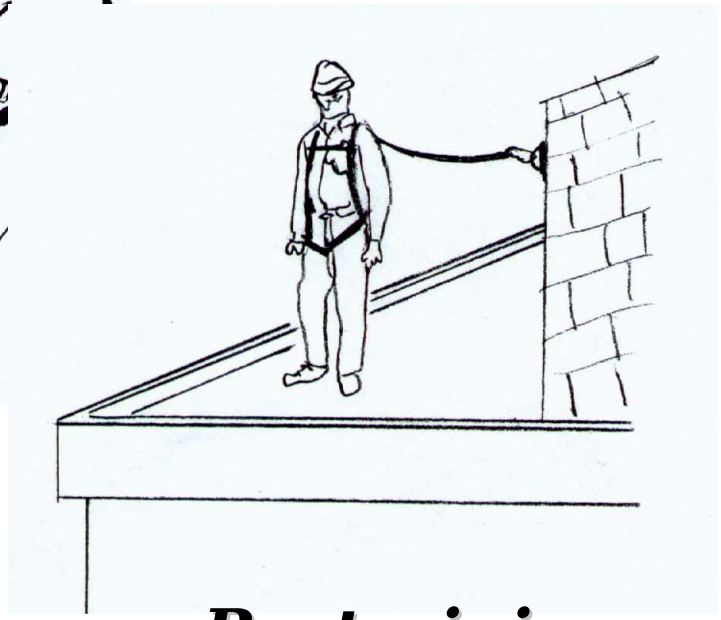
Rope Grab

Positioning and Restraining Systems



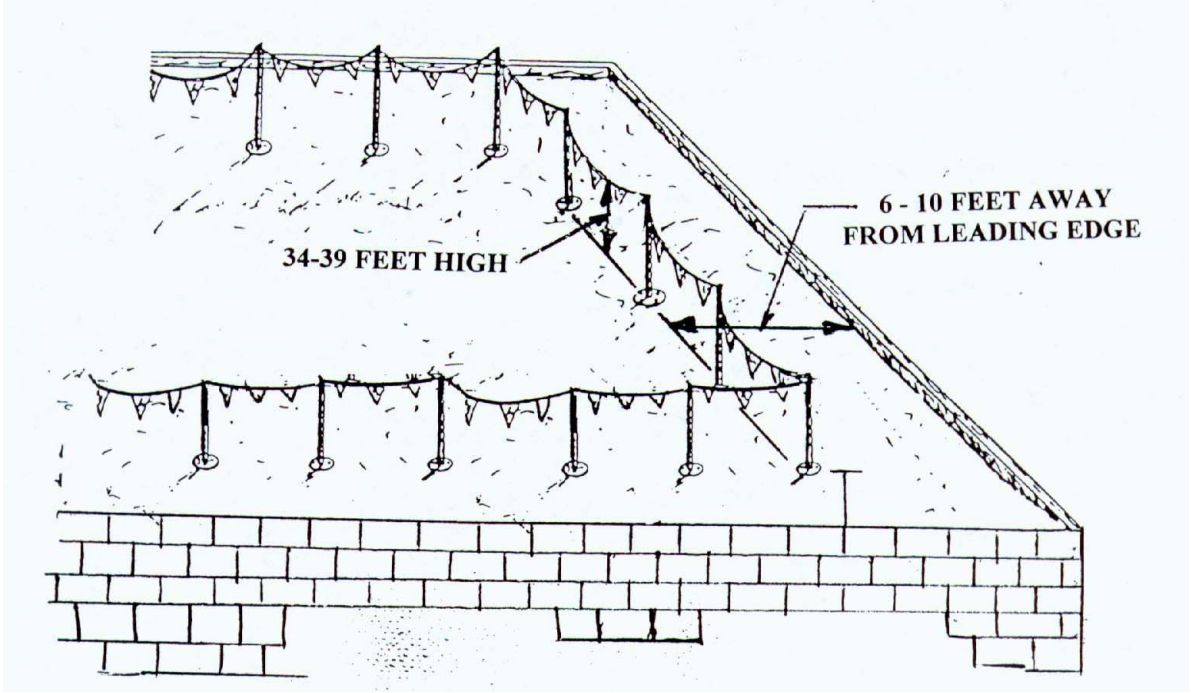
Positioning System W/Vertical Lifeline

Positioning System



Restraining system

Warning Line System



FP Importance During Planning and Design

Fall Protection Cost Profile

- ***Conceptual design*** ***$1***
- ***Final drawing stage*** ***$10***
- ***Construction modification*** ***$100***
- ***Startup & testing*** ***$1,000***
- ***Maintenance*** ***$10,000***